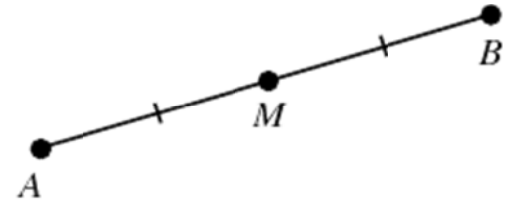


Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Geometry: Midpoint and Distance Homework

1. Find the length of MB if  $AM = 3x + 7$  and  $AB = 14x - 2$ .



2. Find the distance between the points  $(30, -18)$  and  $(44, 30)$ .

3. If you set out to sail 57 miles south and 24 miles west, how much extra sailing did you do compared to if you sailed to directly (in a straight line) to your end location.

4. Describe and correct the error for finding the distance between  $(6, 2)$  and  $(1, -4)$ .



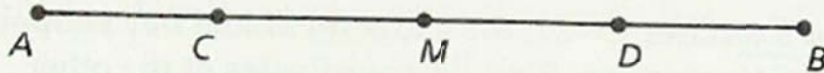
$$\begin{aligned} AB &= (6 - 1)^2 + [2 - (-4)]^2 \\ &= 5^2 + 6^2 \\ &= 25 + 36 \\ &= 61 \end{aligned}$$



$$\begin{aligned} AB &= \sqrt{(6 - 2)^2 + [1 - (-4)]^2} \\ &= \sqrt{4^2 + 5^2} \\ &= \sqrt{16 + 25} \\ &= \sqrt{41} \\ &\approx 6.4 \end{aligned}$$

5.

**HOW DO YOU SEE IT?**  $\overline{AB}$  contains midpoint  $M$  and points  $C$  and  $D$ , as shown. Compare the lengths. If you cannot draw a conclusion, write *impossible to tell*. Explain your reasoning.



- $AM$  and  $MB$
- $AC$  and  $MB$
- $MC$  and  $MD$
- $MB$  and  $DB$

6. Find the midpoint between the points (your birth month digit, last two digits of your birth year) and (today's month, last two digits of today's year).

7. Find the distance and midpoint between the points  $(35, -147)$  and  $(-76, 102)$ .